

# MAIL<sup>360</sup>



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## Response to “Osteoarthritis: a consequence of evolution?”

Dear Sir,

I am writing to commend Tom Hogervorst's article “Osteoarthritis: a consequence of evolution?”.<sup>1</sup> The concept of human evolution as the origin of orthopaedic ailments is one that has been poorly accepted thus far, but widely alluded to. The article was clearly dedicated to hip disease. However, it is in the arena of foot and ankle surgery where most of the similarities of orthopaedic pathological processes and the anatomy of early hominids have been raised. When Dudley Morton proposed in 1935 a hypothetical common ancestor between humans and African apes,<sup>2</sup> he did so while comparing the human foot, with its maladies, to that of known living apes. Norman Lake, also in 1935, described the development of hallux valgus as the “tendency of the great toe to return to its primitive position”.<sup>3</sup> Many argue that this hypothetical ancestor has now been found in the discovery of ‘Little foot’ (*Australopithecus africanus*).<sup>4,5</sup> As more links in this evolutionary tree continue to be discovered a greater idea of the primordial foot is developing.

More recent literature has shown the morphological characteristics of the first tarsometatarsal joint in both humans and Little foot to be similar, with a transverse invagination separating two separate facets.<sup>6</sup> This differs from the smooth unifacet seen in African apes, which allows for their grasping behaviour. However, examination of the first tarsometatarsal joint in hallux valgus

shows an articular surface more resembling that of a grasping quadruped than of a biped,<sup>7</sup> which adds fuel to the fire of evolutionary origins to orthopaedic problems. I believe this is certainly an area where more research is needed, as this may allow us to treat problems early or even prevent disease.

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